

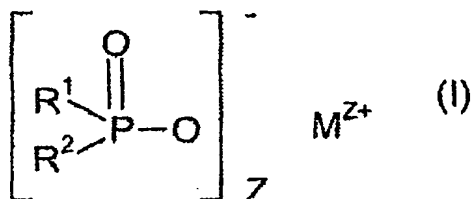
REMARKS

Reconsideration of the application identified in caption, pursuant to and consistent with 37 C.F.R. §1.111 and in light of the remarks which follow, is respectfully requested.

In the Official Action, claims 15, 20-26 and 28-32 stand rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 6,255,371 (*Schlosser et al*) in view of U.S. Patent Application Publication No. 2001/0008913 (*Flippo et al*). Withdrawal of this rejection is respectfully requested for at least the following reasons.

Independent claim 15 is directed to a composition based on a thermoplastic matrix comprising a flame-retardant system, comprising at least:

one compound (F1) of formula (I):



in which:

R¹ and R² are identical or different and represent a linear or branched alkyl chain comprising from 1 to 6 carbon atoms and/or an aryl radical; M represents a calcium, magnesium, aluminum or zinc ion; Z represents 2 or 3;

one compound (F2) which is a reaction product between phosphoric acid and melamine and/or a reaction product between phosphoric acid and a melamine condensation derivative; and

one compound (F3) which is a melamine condensation derivative;

said composition comprising at least 13% by weight of compounds F1 and F2, with respect to the total weight of the composition,

wherein the composition comprises from 1 to 50% by weight of the flame-retardant system comprising at least the compounds F1, F2 and F3; from 1 to 30% by weight of compound F1; from 1 to 20% by weight of compound F2; from 0.1 to 20% by weight of compound F3, with respect to the total weight of the composition.

Schlosser et al discloses a flame retardant combination including, as component A, a phosphinate of the formula (I) and/or a diphosphinate of the formula (II) and/or polymers of these, and comprising, as component B, condensation products of melamine and/or reaction products of melamine with phosphoric acid and/or reaction products of condensation products of melamine with phosphoric acid and/or comprising a mixture of these. See col. 1, line 46 to col. 2, line 12.

Schlosser et al does not disclose or suggest each feature recited in independent claim 15. For example, *Schlosser et al* does not disclose or suggest a composition which comprises from 1 to 50% by weight of the flame-retardant system comprising at least the compounds F1, F2 and F3; and from 0.1 to 20% by weight of compound F3, as recited in claim 15. There is simply no disclosure or suggestion of a composition comprising compounds F1 and F2, as well as from 0.1 to 20% by weight of compound F3. The Patent Office has acknowledged such deficiencies of *Schlosser et al* at page 4 of the Official Action.

Flippo et al relates to a flame retardant polyamide composition that contains a triazine compound as a flame retardant. See Paragraph [0001]. *Flippo et al* teaches that the requirements of the flame retardant are completely fulfilled if the triazine compound as flame retardant is melam. See paragraph [0004]. Thus, *Flippo et al*

distinguishes its composition from other compositions which employ "more complicated melamine compounds and melamine salts". See paragraph [0001].

Flippo et al fails to cure the above-described deficiencies of *Schlosser et al*. *Flippo et al* is concerned with a composition that employs melam as the flame retardant, and does not contemplate the use of "more complicated melamine compounds and melamine salts" therewith, as noted above. In stark contrast, the composition of *Schlosser et al* employs various flame retardants including the phosphinate/diphosphinate or polymer thereof of component A and the component B, which is composed of "condensation products of melamine and/or reaction products of melamine with phosphoric acid and/or reaction products of condensation products of melamine with phosphoric acid and/or...a mixture of these." See col. 1, line 46 to col. 2, line 12. The ordinarily skilled artisan would therefore have recognized that the ranges of melam content disclosed by *Flippo et al* cannot simply be superimposed over the *Schlosser et al* disclosure. Such ranges pertain to a composition in which melam is the primary flame retardant, which is in stark contrast with the *Schlosser et al* disclosure.

Furthermore, *Flippo et al* and *Schlosser et al* teach fundamentally different approaches for providing flame retardant characteristics to a polymer. While *Flippo et al* focuses on the use of melam apart from more complicated melamine compounds and melamine salts, *Schlosser et al* teaches the use of phosphinate/diphosphinate or a polymer thereof and the various permutations of condensation products mentioned above. The ordinarily skilled artisan would have recognized that the complicated condensation reaction products of *Schlosser et al* are compounds of the type that *Flippo et al* wishes to avoid or at least deems unnecessary. As such, upon fair

consideration of the *Schlosser et al* and *Flippo et al* disclosures in their entirety, the ordinarily skilled artisan would not have been motivated to modify *Schlosser et al* in the manner proposed in the Official Action.

As noted in the previous response, Applicants have surprisingly and unexpectedly discovered that by employing the claimed ranges in connection with the compounds F1, F2 and F3, for example, good characteristics can be obtained under each of the UL 94 test, GWFT and GWIT. By comparison, *Schlosser et al* is merely concerned with the UL 94 test, and has no recognition or suggestion of obtaining a composition which exhibits good characteristics under GWFT and GWIT. The applied art simply has no recognition of the result-effective nature, for example, of the amounts of each of the compounds F1, F2 and F3 on obtaining good characteristics under GWFT and GWIT. As such, it would not have been obvious to optimize the amounts of the constituents disclosed by *Schlosser et al* to arrive at the claimed ranges of the amounts of the compounds F1, F2 and F3. Moreover, in view of the surprising and unexpected nature of aspects of the claimed invention as seen, for example, from the experimental data set forth in Applicants' disclosure, it is apparent that independent claim 15 is not obvious over the applied art.

Concerning such experimental data, the Patent Office has noted the different amounts of the constituents employed in the comparative and exemplary compositions set forth in Table 1 at page 15. See Official Action at page 7. With regard to the different amounts of PA 66 employed in the examples, it is noted that the increased amount of PA 66 employed in Comparative Example A is due to the fact that F3 was not employed therein for comparative purposes. Further, the inventive examples taken as a whole encompass the amounts of F1, F2 and ZB employed in Comparative

Example A. With regard to the Examiner's comments concerning the scope of the experimental data, Applicants note that such experimental data is at least effective to show the surprising and unexpected results obtainable by employing F3 with F1 and F2, in comparison with the use of F1 and F2 alone. Respectfully, the surprising and unexpected nature of aspects of the claimed invention are apparent upon fair consideration of the comparative data.

Accordingly, for at least the above reasons, withdrawal of the above §103(a) rejection based on *Schlosser et al* and *Flippo et al* is respectfully requested.

Claim 27 stands rejected under 35 U.S.C. §103(a) as being obvious over *Schlosser et al*, and in view of U.S. Patent No. 6,433,045 (*Hanabusa et al*). Withdrawal of this rejection is respectfully requested for at least the following reasons.

As noted above, *Schlosser et al* does not disclose or suggest a composition comprising compounds F1 and F2, as well as from 0.1 to 20% by weight of compound F3, as recited in claim 15. The Patent Office has acknowledged such deficiencies of *Schlosser et al* at page 4 of the Official Action.

Hanabusa et al has been relied on by the Patent Office for disclosing a fire retardant composition comprising specific inorganic fillers. See Official Action at page 6. However, like *Schlosser et al*, *Hanabusa et al* does not disclose or suggest a composition comprising compounds F1 and F2, as well as from 0.1 to 20% by weight of compound F3, as recited in claim 15.

Furthermore, it is noted that while *Flippo et al* has not been relied on by the Patent Office in the present rejection, Applicants submit that such document would not have been combined with *Schlosser et al* for at least the reasons discussed above in connection with the §103(a) rejection based on such documents.

Accordingly, for at least the above reasons, withdrawal of the above §103(a) rejection based on *Schlosser et al* and *Hanabusa et al* is respectfully requested.


From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such action is earnestly solicited. If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

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By:



Roger H. Lee
Registration No. 46317

P.O. Box 1404
Alexandria, VA 22313-1404
703 836 6620